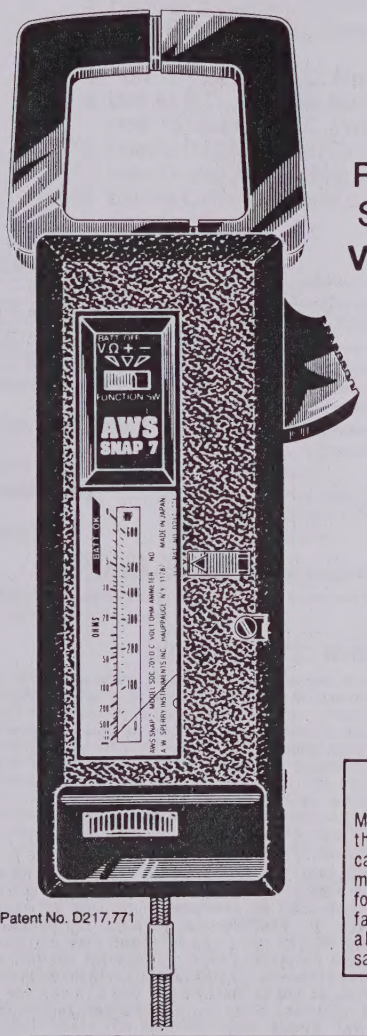
FORM #124A 4/85

OPERATING INSTRUCTIONS

AWS SNAP 7 MODEL SDC-701



U.S. Patent No. D217,771

D.C.

ROTARY SCALE
SNAP-AROUND
VOLT-
OHM-
AMMETER

PLEASE READ CAREFULLY

Misuse and or abuse of these instruments may cause injury and or equipment damage. Please follow these instructions faithfully and adhere to all standard industry safety rules.

A.W. SPERRY INSTRUMENTS INC.
The Measurable Advantage.

245 Marcus Blvd., Hauppauge, N.Y. 11788
800-645-5398 N.Y., Hawaii, Alaska call 516-231-7050

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SPECIFICATIONS

AMPS	RANGES	ACCURACY
D.C. AMPS	30/75/150/300/600 A.* D.C.	± 5% F.S.
D.C. VOLTS	3/30/300 V. D.C.	± 3% F.S.
OHMS	2KΩ, with 25Ω Mid-Scale	± 3% of Arc Length**

POWER SUPPLY – One (1) 9V battery inside instrument
– One (1) 1.5V battery in Ohmprobe® OBA/4

FUSE PROTECTION – One (1) Bussmann KTK 600V rated fuse, ¼ amp. in Ohmprobe OBA/4

DUTY CYCLE – Continuous

DIMENSIONS – 10.04"H x 2.835"W x 1.575"T x 3.425" across jaws (250mm x 72mm x87mm)

WEIGHT – 23 oz. (650g.)

DO NOT EXCEED ABOVE SPECIFIED MAXIMUMS FOR EACH FUNCTION

* Instrument designed for D.C. current readings on circuits with a maximum of 600 Volts D.C.

** Arc length is 2.36" (60mm)

ONE YEAR LIMITED WARRANTY

A.W. Sperry Instruments Inc., warrants that this AWS Instrument has been carefully tested, inspected, and warranted for one (1) year from the date of purchase by the original end user against defects in material or workmanship. This warranty covers only the original end user purchaser provided the completed warranty card is returned within ten (10) days after purchase and the instrument has not been misused, damaged due to negligence, neglect or unauthorized repair, abused or used contrary to the operating instructions. Instruments must be returned to A.W. Sperry Instruments Inc., Attention: Customer Service Center, 245 Marcus Boulevard, Hauppauge, New York 11788, postage prepaid for examination and verification of manufacturing defect under warranty. A.W. Sperry Instruments Inc. shall be the sole judge of the existence of such defect. The liability of A.W. Sperry Instruments Inc., shall be limited to the repair or replacement at its sole option of any defective product.

THIS WARRANTY AND THE OBLIGATIONS AND LIABILITIES OF SELLER THEREUNDER ARE EXCLUSIVE AND IN LIEU OF AND BUYER HEREBY WAIVES ALL OTHER REMEDIES, EXPRESS WARRANTIES, GUARANTEES OR LIABILITIES, OF AND FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OR WHETHER OR NOT OCCASIONED BY SELLER'S NEGLIGENCE. THIS WARRANTY SHALL NOT BE EXTENDED, ALTERED OR VARIED EXCEPT BY A WRITTEN INSTRUMENT SIGNED BY SELLER AND BUYER. SOME STATES ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL DAMAGES, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIED LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

WARRANTY REGISTRATION

To validate warranty, please complete the warranty registration card enclosed with your instrument and return to **A.W. Sperry Instruments Inc., 245 Marcus Blvd., Hauppauge, N.Y. 11788** within 10 days of purchase. No postage required.

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SNAP 7 MODEL SDC-701

REAR VIEW

IMPORTANT

AWS SNAP 7's requiring periodic maintenance, calibration or repair, should be serviced by factory trained technicians ONLY. Do NOT open the housings or attempt repair lest it cause serious injury and/or damage to equipment under test.

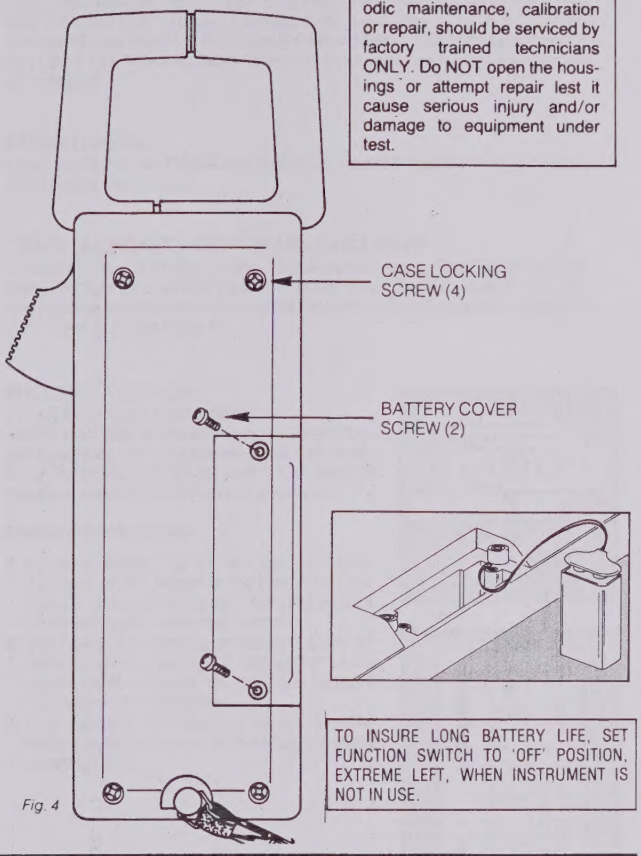
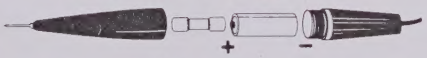


Fig. 4

TO INSURE LONG BATTERY LIFE, SET FUNCTION SWITCH TO 'OFF' POSITION, EXTREME LEFT, WHEN INSTRUMENT IS NOT IN USE.

OHMPROBE OBA/4

TO REPLACE FUSE OR BATTERY



Unscrew halves of OHMPROBE® plastic case. Components are spring loaded and come apart readily.

FUSE

Use AWS Type F-6. Fast acting high interrupting capacity. Bussmann KTK ¼ Amp., 600VAC Rating. 13/32" x 1½", OR EQUAL.

CAUTION – Do NOT use other than specified Fuse. Do NOT bypass fuse. Do NOT jump fuse. Do NOT use higher than specified AMP capacity. Do NOT alter fuse circuit.

BATTERIES

Inside Instrument. Use AWS Type B-4. 9V Transitor Type. NEDA #1604, or equal.

Inside Ohmprobe OBA/4. Use AWS Type B-1. Type "AA" 1.5V, or equal.

NOTE: If the OHMPROBE is taken out of use for any length of time, it is best to remove the battery before storing the attachment. Insert a fresh battery when the unit is restored to use.

INSTRUMENT PACKAGING

Unit Pack contains one (1) AWS Snap 7 Model SDC-701 D.C. Snap-Around Volt-Ohm-Ammeter; one (1) set TL-10 Test Leads; one (1) OBA/4 Ohmprobe with F-6 Fuse & B-1 Battery installed; AWS B-4 Battery to be installed in the instrument (see Page 4.); all packed in Carrying Case C-23 ; Operating Instructions SPB-124; Warranty Card. Please check to make sure unit pack is complete as indicated.

FUSE CHECK

Open the Ohmprobe OBA/4 and make sure the AWS Type F-6 Fuse is installed and in place. See Page 4.

"REPLACE BATTERY" WARNING LIGHT

A small LED (Light Emitting Diode), located in the lower right section of the scale plate, will light up when the Type B-4 Battery inside the instrument is run down and requires replacement. Remove the old battery immediately and replace with AWS Type B-4. See Page 4.

BATTERY CHECK

(Type B-4 Inside Instrument)

Rather than wait for the battery to run down completely and cause any inconvenience if an immediate replacement is not at hand, it is possible to regularly check the condition of the battery.

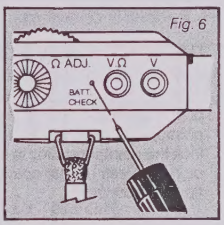


Fig. 6

Follow this procedure –

1. Insert a Probe Tip in the Battery Check Aperture on the bottom of the instrument, see Page 3, and push in lightly. This will actuate a small leaf switch inside the instrument.
2. The pointer will deflect upward on the scale. If it comes to rest in the BATT. OK section at the upper left of the scale, the battery is Good. If not, replace it immediately.
3. It is advisable to check the condition of the battery at the beginning of the work day to make sure it is Good.

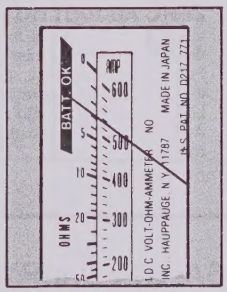


Fig. 7

FRONT PANEL CONTROLS

FUNCTION SWITCH

Located on front panel, directly below transformer jaws. 3 Position Slide Switch.
Extreme Left Position – BATT. OFF/V.Ω.
Middle Position – ON (+) Readings (See Pg. 8)
Extreme Right Position – ON (–) Readings (See Pg. 8)

Note: To prolong battery life, Set Function Switch to BATT. OFF (extreme left) when instrument is not in use.

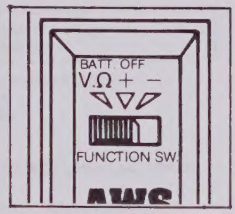


Fig. 8

RANGE SWITCH

(Knurled Red Knob)

Located on front panel, directly below scale plate. Rotate knurled knob so that the desired range on the Dial Drum appears in the window.

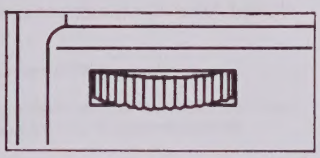


Fig. 9

POINTER LOCK BUTTON

Located on front panel, in the middle right. Slide button to the left to lock the pointer. Slide to the right to release the pointer. This feature will enable you to lock the pointer reading in dimly lit areas or regardless of the location and position of conductors.

ZERO ADJUST BUTTON

Located on front panel, in middle right, directly below the Pointer Lock Button. For greatest accuracy, make certain that the pointer is set exactly on the Zero Line of the scales. Rotate the Zero Adjust Button until pointer is directly over Zero Line.

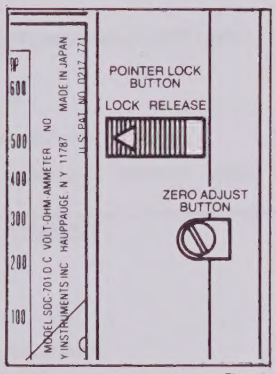

POINTER LOCK BUTTON
LOCK RELEASE
ZERO ADJUST BUTTON
MODEL SDC 701 D C VOLT-OHM-AMMETER NO
Y INSTRUMENTS INC HAUPPAUGE N Y 11787 MADE IN JAPAN
U.S. PAT. NO. D217,771

Fig. 10

SAFETY CARRYING STRAP

To prevent damage should the instrument fall out of the hand, use the carrying strap (over the wrist) as recommended. Thus, the instrument can drop safely away when the reading is taken.

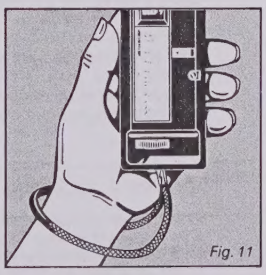


Fig. 11

THINK SAFETY – ACT SAFELY

Do **NOT** use other than specified fuse. Do **NOT** bypass fuse. Do **NOT** jump fuse. Do **NOT** use higher than specified AMP capacity. Do **NOT** alter fuse circuit.

Do **NOT** exceed the published maximums for each function.
600 AMPS D.C. MAXIMUM
300 VOLTS D.C. MAXIMUM
2K OHMS MAXIMUM

Instrument is designed for DC AMPS & DC VOLTS. Do **NOT** use on AC circuits.

Do **NOT** measure DC Amps with Test Leads plugged into volt terminals.

Do **NOT** measure DC Volts with Ohmprobe plugged into Ohmprobe Terminal. Fuse will blow.

When measuring DC Volts, follow procedure on Page 9.

When volt measurements are completed, **FIRST** remove Test Leads from circuit being checked, **THEN** remove Test Leads from the instrument terminals.

When measuring OHMS (Ω), **MAKE SURE** that the circuit being checked is **DEAD**, completely DE-ENERGIZED.

When instrument is **NOT** in use, ALWAYS set Function Switch to **OFF** position, at extreme left.

Keep the instrument in its case when not in use.

Do **NOT** polish the instrument. Wipe clean with cloth when necessary.

READ OPERATING INSTRUCTIONS CAREFULLY BEFORE USING INSTRUMENT.

QUICK CHECK BEFORE MEASUREMENT

1. Check battery condition. See Page 5.
2. Slide Pointer Lock to left to release pointer.
3. Check Zero position of pointer.
4. Set Function Switch to required position.
5. Set Range Switch to highest range of function desired.
6. Measuring Amps – snap jaws over 1 conductor.
   Measuring Volts – make connections as recommended on Page 9.
   Measuring Ohms – make SURE circuit is DEAD, COMPLETELY DE-ENERGIZED. Follow procedure on Page 11.
7. Use Safety Carrying Strap.
8. Check all FRONT PANEL CONTROLS carefully before proceeding.

CAUTION – READ CAREFULLY – CAUTION

Measurements for OHMS are to be made on de-energized (DEAD) circuits ONLY. Impressing live volts across the OHM circuit of the instrument may result in injury to the operator and/or damage to the instrument and/or equipment. The extent of damage will depend on the volts and amps going through at the time of measurement.

CAUTION — MEASUREMENT PROCEDURE — CAUTION

To eliminate the possibility of injury to the operator and damage to the instrument and equipment, the procedure outlined in this manual is recommended. Exercise care and caution in preparing equipment for test and measurement, making sure that all Ω measurements are on completely de-energized circuits. Mis-use, abuse and carelessness cannot be prevented by any written word and is clearly the operator's responsibility. This instrument is **not** approved for use in an explosive atmosphere, dust or vapor.

HOW TO USE THE AWS SNAP 7
AS A D.C. AMMETER

D.C. AMPERE RANGES ARE 30/75/150/300/600 A.
AMPERE RANGES ON DIAL DRUM ARE PRINTED BLACK

CAUTION

Before measuring D.C. Amps make certain the Voltage Test Leads & the Ohmprobe are removed from the instrument.

1. Release Pointer Lock by sliding button to extreme right.
2. Use Zero Adj. Button to position pointer over "0" mark at bottom of scale.
3. Set Function Switch to "+" Position (Middle). Power is ON and the instrument is operative.
4. Rotate Range Switch until 30A Range appears in the window.
5. Rotate "A CAL" Switch on bottom right of instrument, to position pointer over the "0" mark.
6. If current being measured is known, set Range Switch to desired range. Make sure pointer is on "0" mark of scale.

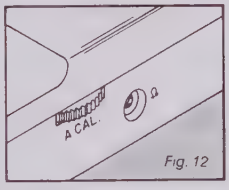


Fig. 12

7. If current is not known, set Range Switch to 600A Range and work down until a reading is obtained in the upper half of the scale. Make sure pointer is on "0" mark before measurement is taken.
   Note: If pointer is NOT on "0" mark as the AMP Ranges are worked down, return the 30AMP Range to the window, and adjust pointer to "0" using "A CAL" switch. Rotate Range Switch again to the desired range.
8. Press the trigger to open the Transformer Jaws and encircle one (1) conductor. Release trigger and close jaws, making sure that the jaws are snapped tightly shut.
9. Reading may now be taken.
   Note: If pointer deflects in opposite direction, NOT up scale, set Function Switch to "−" Position (extreme right). See Figs. 15 and 16 showing current flowing in "+" and "−" direction in conductor inside jaws.

CORRECT

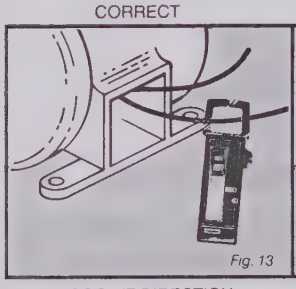


Fig. 13

WRONG

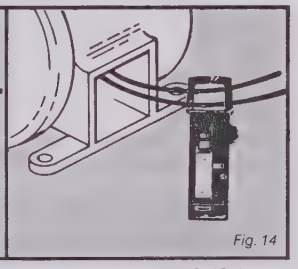


Fig. 14

POSITIVE DIRECTION READING

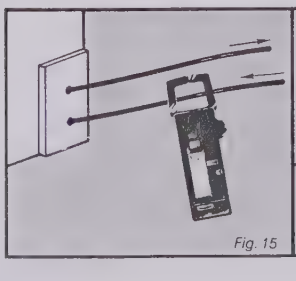


Fig. 15

NEGATIVE DIRECTION READING

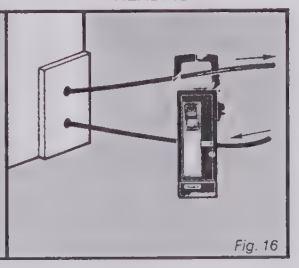


Fig. 16

HOW TO USE THE AWS SNAP 7
AS A D.C. VOLTMETER

2. Release Pointer Lock by sliding button to extreme right.
3. Use Zero Adj. Button to position pointer over "0" mark at bottom of scale.
4. Set function Switch to "V.Ω" Position (extreme left). Instrument is ON and operative.
5. Set Range Switch so that the HIGHEST voltage range appears in the window.
6. Connect alligator clip of Black Lead to one side of the circuit being measured.
7. Hold instrument in one hand, and using the alligator clip and Probe Tip of the Red Lead as a test prod, touch the other side of the circuit being measured.
8. If reading does not exceed 300 Volts D.C., connect the alligator clip from the Red Lead to the other side of the circuit and take the voltage reading.

   If reading is in the lower half of the scale, rotate Range Switch to next lowest voltage scale. Repeat until the reading is in the UPPER HALF of the scale.
9. After reading is taken, disconnect the alligator clips one at a time from the circuit being measured, and THEN REMOVE VOLTAGE LEADS FROM THE INSTRUMENT.

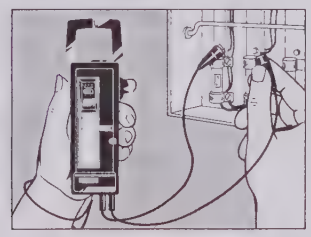


Fig 19

HOW TO READ VOLTAGE SCALES

With the Pointer in position shown, the reading will be as indicated depending on the setting of the Range Switch.

Scales illustrated below are actual size

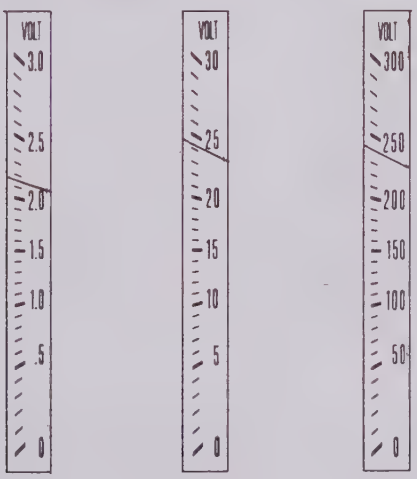


Fig. 20

Pointer Reads 2.15 V D.C.

Pointer Reads 24.3 V D.C.

Pointer Reads 240 V D.C

HOW TO USE THE AWS SNAP 7
AS AN OHMMETER

OHM RANGE IS 2KΩ, with 25Ω MID-SCALE
OHM RANGE IS PRINTED BLACK, ON LEFT SIDE OF FLAT SCALE.

CAUTION – READ CAREFULLY – CAUTION

MEASUREMENTS FOR OHMS ARE TO BE MADE ON DE-ENERGIZED (DEAD) CIRCUITS ONLY. IMPRESSING LIVE VOLTS ACROSS THE OHM CIRCUIT OF THE INSTRUMENT MAY RESULT IN INJURY TO THE OPERATOR AND/OR DAMAGE TO THE INSTRUMENT AND/OR EQUIPMENT. THE EXTENT OF DAMAGE WILL DEPEND ON THE VOLTS AND AMPS GOING THROUGH AT THE TIME OF MEASUREMENT.

CAUTION – MEASUREMENT PROCEDURE – CAUTION

To eliminate the possibility of injury to the operator and damage to the instrument and equipment, the procedure outlined in this manual is recommended. Exercise care and caution in preparing equipment for test and measurement, making sure that all Ω measurements are on completely de-energized circuits. Misuse, abuse and carelessness cannot be prevented by any written word and is clearly the operator's responsibility. This instrument is **not** approved for use in an explosive atmosphere, dust or vapor.

1. Insert Black Test Lead plug into the "VΩ" receptacle on the bottom of the instrument. Twist clockwise to lock in position. See Fig. 21.
2. Insert OHMPROBE plug into the "Ω" receptacle on the right side of the instrument. Twist clockwise to lock in position. See Fig. 21.
3. Release Pointer Lock by sliding button to extreme right.
4. Set Function Switch to "VΩ" Position (extreme left). Note: Power for OHM readings is furnished only by the B-1 "AA" 1.5V Battery in the OHMPROBE.
5. **ZERO BOTTOM WITH LEADS OPEN**
   Use Zero Adjust button on front panel to line pointer over the ∞ (infinity) mark at the extreme bottom of the Ohm scale, Fig. 22.
6. **ZERO TOP WITH LEADS SHORTED**
   Short the leads as shown in Fig. 23 and line pointer over "0" mark at extreme top of OHM scale, using "Ω ADJ." Knob on the bottom of the instrument (see Page 3).
7. Connect Mueller type Clip of Black Test Lead to one side of circuit being measured. Touch other side with the Ohmprobe point. Read resistance on OHM scale.
8. After reading is taken, remove OHMPROBE from the instrument and the Black Test Lead as well.

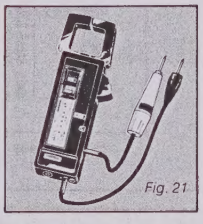


Fig. 21

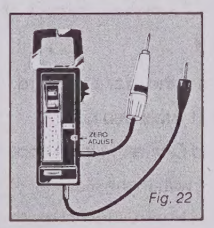


Fig. 22

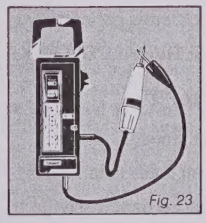


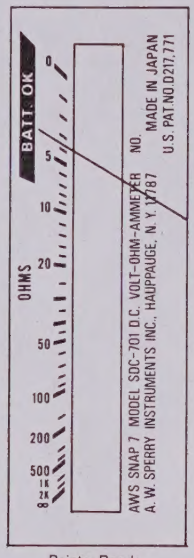
Fig. 23

CAUTION

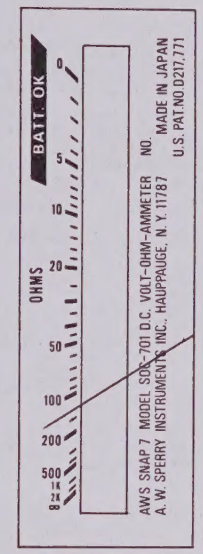
Disconnect line voltage from circuit to be checked before taking any resistance measurement. The OHMPROBE® is fused to prevent damage to the instrument if a resistance measurement is taken on a live circuit.

HOW TO READ THE AWS SNAP 7 OHM SCALE

Scales illustrated below are actual size



Pointer Reads
3.5 Ohms



Pointer Reads
137 Ohms

Fig. 24

FOR BETTER INSTRUMENT SERVICE

DO

Return the Warranty Card.

Read published ratings.

Read Operating Instructions.

Start with highest scale.

Read in upper half of scale.

Check leads periodically for damage.

OBSERVE ALL SAFETY RULES.

DON'T

Alter circuitry.

Solder leads in terminals.

Overload needlessly.

Polish Window.

Subject to severe shock.

Exceed instrument rating.

Attempt repairs yourself.

Attempt to read amps and volts at same time.

PRINTED IN U.S.A.

MP MASTER
MA35977